

REMARKS

In the Office Action, claims 1-12 and 16-18 were rejected under 35 U.S.C. § 112, first paragraph, as based on a disclosure which was not enabling. Claims 1-13 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter. Claims 1-18 were rejected under 35 U.S.C. § 102 (b) as being anticipated by Lai (U.S. patent 6,118,841). By this response, claim 13 has been amended to correct the antecedent basis. Claims 1-18 remain pending in the present patent application. Reconsideration and allowance of all pending claims are requested in view of the following remarks.

Rejections Under 35 U.S.C. § 112

Rejections under 35 U.S.C. § 112, first paragraph.

Claims 1-12 and 16-18 were rejected under 35 U.S.C. § 112, first paragraph, as based on a disclosure which was construed to be not enabling. The Office Action maintained that the X-ray source, critical or essential to the invention, was not enabled by the disclosure. Applicants respectfully traverse the section 112 rejection.

The Court of Appeals for the Federal Circuit has repeatedly addressed the issue of sufficiency of disclosure, and that Court's precedent controls in these issues. Indeed, the standard for determining whether the specification meets the enablement requirement was cast in the Supreme Court decision of *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916) in terms of the degree of experimentation needed to practice the claimed invention, and whether this degree of experimentation is undue or unreasonable. The Federal Circuit continues to employ this same standard. *In re Wands*, 8 U.S.P.Q.2d 1400, 1404 (Fed. Cir. 1998). A patent need not teach, and preferably omits, what is well known in the art. *In re Buchner*, 18 U.S.P.Q.2d 1331, 1332 (Fed. Cir. 1991). Moreover, it has long been settled that so long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire

scope of the claims, the enablement requirement under 35 U.S.C. § 112 is satisfied. *In re Fisher*, 166 U.S.P.Q. 18, 24 (CCPA 1970).

Applicants respectfully submit that the X-ray source is adequately enabled in the disclosure of the Applicants' application. Support for the same can be found in the Applicants' description related to Figure 1, 2, and 3. For example, page 6, last paragraph, line 3 reads, “[p]atient 22 is positioned between X-ray source 14 and detector array 18.” This description is followed by description of how the gantry rotates the X-ray source and detector about the patient. Further, on page 7, first paragraph, line 1 one reads, “X-ray source 14 emits radiation forming a field of view that is defined by the rotational axis and imaging geometry.” This paragraph further describes exemplary fields of view based on the shape of radiation emitted from the X-ray source. Thus, Applicants submit that the specification clearly describes the X-ray source and the functionality of the X-ray source with respect to the claimed invention.

Moreover, Applicants maintain that the description of the source is certainly complete in view of the knowledge of those skilled in the art, and the subject matter for which protection is sought. Those skilled in the art of CT imaging fully understand the nature and operation of X-ray sources. Such sources have been known for many years and little or no specific description of how such sources are made needs to be explained to enable the present invention. Moreover, the invention relates to the asymmetric positioning of detector elements with respect to a field of view. The source is incidental to the field of view, and the description provided in the present application implicitly informs the reader of that fact through the treatment of the source, and the emphasis on the field of view.

Rejections under 35 U.S.C. § 112, second paragraph.

Claims 1-12 were also rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential elements, such omission said to lead to a “gap” between

the elements. The omitted element, according to the Office Action, was an X-ray source. The Office Action further states that the field of view is not a tangible object to be referenced as is done in the claims of the Applicants' application.

Although the Examiner may take exception to the terms used in the claims, he is reminded that the patentee may be his own lexicographer. *Ellipse Corp. v. Ford Motor Co.*, 171 U.S.P.Q. 513 (7th Cir. 1971), *aff'd*. 613 F.2d 775 (7th Cir. 1979), *cert. denied*, 446 U.S. 939 (1980). The terms employed in the claims are clearly described in the specification, which provides adequate teaching for one skilled in the art to make and use the claimed invention.

As mentioned above in reference to section 112 first paragraph rejection, the specification on page 7, first paragraph, line 1 reads "X-ray source 14 emits radiation forming a field of view that is defined by the rotational axis and imaging geometry." Thus the term "field of view" is adequately defined. The same paragraph continues to illustrate examples of fields of view in lines 3-6: "in one embodiment, X-ray source 14 emits radiation in a cone shape forming a field of view 58 in a horizontal cross section whose centerline defines central axis 50. In another embodiment, X-ray source 14 emits radiation in a shape other than a cone shape and forms a field of view in a horizontal cross section whose centerline defines a central axis." Because field of view is adequately described and defined with respect to X-ray source, Applicants' do not consider it essential to include X-ray source in the claims.

Furthermore, there is no basis for the rejection. The mere fact that the Examiner would rather see the X-ray source recited as a claim element is insufficient to support a rejection that the claim recites an unworkable invention, or any other rejection under section 112. The cited claims include no antecedent basis deficiencies, and the definition and linking of the elements is proper and complete. Reconsideration and allowance of the claims on this basis are requested.

Finally, Applicants submit that a field of view, as those skilled in the art understand that term, *is* a tangible thing. That is, the field is defined by radiation, and within the wavelengths of the radiation, the field of view can be detected, includes limits, and influences where features will be imaged and where they will not be imaged. In short, a field of view is as tangible as radiation itself or the data that is collected by the CT detector. As such, Applicants are aware of no law precluding such terms from recitation as claim elements.

Antecedent basis rejection.

Claim 13 was rejected for insufficient antecedent basis, and the claim has been amended to correct this informality.

In summary, the Examiner bears the burden of establishing a *prima facie* case of non-enablement. A specification disclosure which contains a teaching of the manner and process of making and using a claimed invention in terms which correspond to the scope of those used in describing and defining the subject matter sought to be patented, as in the present case, must be taken as being in compliance with the enablement requirement. See Manual of Patent Examining Procedure, Section 2164.04.

In view of the above remarks, withdrawal of the rejections under 35 U.S.C. § 112 is earnestly solicited.

Rejections Under 35 U.S.C. § 102

Claims 1-18 were rejected under 35 U.S.C. § 102 (b) as being anticipated by Lai (US patent 6,118,841). Applicants have carefully reviewed the applied reference, and respectfully traverses the rejection of independent claims 1, 6, 7, 12, 13 (amended), 16 and 18, under 35 U.S.C. § 102 as being anticipated by Lai.

A *prima facie* case of anticipation under 35 U.S.C. § 102 requires a showing that each limitation of a claim is found in a single reference, practice or device. *In re Donohue*, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985).

Applicant respectfully submits that Lai does not teach, disclose or suggest at least the claim recitation of “detector sections in an asymmetric arrangement about a central axis of the field of view”, or similar recitations of each of independent claims 1, 6, 7, 12, 13 (amended), 16 and 18. Lai describes an improved method and apparatus for cone-beam reconstruction, employing in one aspect, a detector array of an asymmetric shape with respect to the translation axis (*see* Lai, column 4, lines 24-27). In this aspect in Lai, the elements of the detector column are elongated along the translation axis with respect to the elements of a central column (*see* Lai, column 4, lines 43-47). In another embodiment, Lai discloses a detector array at a tilt angle α with respect to the translation axis. (*see* Lai, column 3, lines 54-61 and column 21, lines 26-33). Neither of these embodiments teaches, discloses or suggests the above highlighted claim recitation of detector sections in an asymmetric arrangement about a central axis of the field of view of the independent claims of the Applicants’ application.

The translation axis of Lai is defined as the axis that is normal to the plane of rotation of the gantry (*see* Lai, column 3, lines 50-52). The teachings of Lai are, then, that the detector array can be asymmetric with respect to this axis. However, this implies nothing about the geometrical or spatial relation of the detector array and the field of view. Certainly, Lai is not even concerned with the field of view, as the term cannot be found in the reference. One skilled in the art can easily envision many arrangements in which a detector array is asymmetric with respect to an axis normal to the plane of rotation, but fully centered or symmetric with respect to a field of view. The disclosure of Lai simply are insufficient to teach asymmetric detector arrangements *with respect to a field of view*.

Thus Applicants respectfully submit that the independent claims 1, 6, 7, 12, 13 (amended), 16 and 18 are not anticipated by Lai under 35 U.S.C. § 102 and therefore, are allowable. Claims 2-5 depend directly or indirectly from claim 1, claims 8-11 depend directly or indirectly from claim 7, claims 14, 15 depend directly or indirectly from claim 13 and claim 17 depends from claim 16. Thus claims 2-5, 8-11, 14, 15 and 17 are similarly allowable.

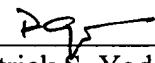
Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 102(b) and requests allowance of claims 1-18.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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